

PATENT ABSTRACTS OF JAPAN

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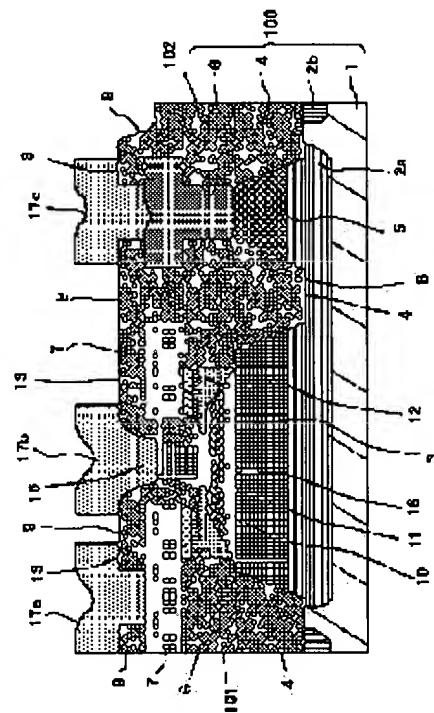
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(54) SEMICONDUCTOR DEVICE AND ITS MANUFACTURE

(57)Abstract:

PURPOSE: To provide a semiconductor device for suppressing junction characteristic deterioration and its manufacturing method.

CONSTITUTION: A polycrystalline 7 for P-type base electrode is formed on silicon oxide film 6 so that it projects into an opening 101. Undoped single-crystal $\text{Si}_{0.9}\text{Ge}_{0.1}$ layer 10, P+-type single-crystal $\text{Si}_{0.9}\text{Ge}_{0.1}$ layer 11, and N+-type single-crystal emitter 16 are formed on a silicon collector layer 3 in the opening 101. In the single-crystal $\text{Si}_{0.9}\text{Ge}_{0.1}$ layer 10 and single-crystal $\text{Si}_{0.9}\text{Ge}_{0.1}$ layer 11, the thickness of a part located at the lower portion of the silicon 7 is thinner than that of other parts with its section being in trapezoid shape. In P+-type single-crystal silicon layer 12, the thickness of a part located at the lower portion of the polycrystalline silicon 7 is thicker than that of other parts and the layer 12 contacts the polycrystalline silicon 7 via a polycrystalline film 13.



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